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ABSTRACT

The American Council of Learned Societies and the Council on Library and Information Resources appointed 36 scholars, librarians, and leaders of various academic enterprises to five task forces "to consider changes in the process of scholarship and instruction that will result from the use of digital technology and to make recommendations to ensure that libraries continue to serve the research needs of scholars." Five areas of concern for the future of research libraries emerged: (1) research libraries should amass collections of deep relevance in a coordinated fashion, encompassing information resources in both digital and traditional formats; (2) institutions must invest fiscal and other resources to make unique or special collections more broadly accessible. Faculty are urged to make increased use of primary source materials to develop critical thinking in students; (3) library organizations and learned societies should explore the possibilities of exploiting and managing intellectual property to yield greater benefits to the scholarly communities; (4) institutions of higher education and research should place more emphasis on training and support for faculty use of information and instructional technologies; (5) There is too little sharing of information to enable the scholarly community to participate in the philosophical and policy issues arising from the use of information technology in research and teaching, as well as in libraries. Appendices include a list of participants, recommendations, ACLS-CLIR Program Initiatives; and other ACLS-CLIR projects. (Author/AEF)

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Scholarship, Instruction, and Libraries at the Turn of the Century

Results from Five Task Forces Appointed by the American Council of Learned Societies and the Council on Library and Information Resources

January 1999

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Preface

Digital technology is credited with changing the nature of scholarship and teaching, but perceptions of the benefits of the technology vary widely from person to person. Many librarians have embraced the technology as the best vehicle for expanding access to information resources, while also broadening the roles and responsibilities of the traditional library. The perceptions of scholars in the humanities and related social sciences are far more varied. Some scholars warmly endorse the librarians' focus on electronic resources because they want better access to collections at remote sites. But other scholars express concern that funds presently used to purchase and preserve books and journals will be diverted to building network infrastructure and purchasing electronic resources.

To understand how technology is changing the nature of scholarship and teaching, the American Council of Learned Societies (ACLS) and the Council on Library and Information Resources (CLIR) joined forces to establish five task forces that examined these questions by looking at the special requirements posed by different types of information resources.

The deliberations of these task forces are detailed in this report. Little here will come as a great surprise to either the library or scholarly communities. The interests and enthusiasms of the task force members vary, based on their beliefs about what the future holds for them and their professions. What scholars want from librarians of the future is not so different from what they have wanted all along—the full range of resources they need to do their work. While they may sympathize with the financial decisions that plague librarians, they do not focus on them. Certainly, there is no single scholarly perspective that libraries can use as a guiding principle.

From the discussions, we have extracted all of the recommendations that were proposed by individual task force members. While some clear priorities emerged, the groups did not always attempt to reach consensus on the various recommendations nor to place them in priority order. Many of the ideas, we believe, will be pursued by professional associations and scholarly societies. We hope these recommendations will be discussed and adopted wherever appropriate.

As for our two organizations, we hope to facilitate librarians' and scholars' continuing discussions to help guide the development of digital library resources to be made available for scholarship and teaching. And we would hope to assist the smaller scholarly societies make the transition to electronic publishing. We believe such partnerships between libraries and scholarly societies benefit both organizations.

The recommendations of the task forces will prove helpful to both ACLS and CLIR as we continue to address these issues. We are grateful to the Gladys Krible Delmas Foundation for funding these preliminary discussions. Our hope is that many librarians, faculty members, and university officers will find information here that will help them make better decisions on local campuses.

John D'Arms
President
American Council of Learned Societies

Deanna B. Marcum
President
Council on Library and Information Resources

Executive Summary

The American Council of Learned Societies and the Council on Library and Information Resources appointed 36 scholars, librarians, and leaders of various academic enterprises to five task forces "to consider changes in the process of scholarship and instruction that will result from the use of digital technology and to make recommendations to ensure that libraries continue to serve the research needs of scholars." The task forces met in the 1997-1998 academic year.

From a large number of detailed recommendations, there emerged five areas of concern for the future of research libraries.

1. Despite predictions of the collapse of research libraries because of the widespread availability of information on the World Wide Web, in fact the roles and responsibilities of libraries and librarians have expanded because of the Web. While libraries are proud of their accomplishments, scholars are concerned about the tendency of library collections to grow more similar in content under fiscal pressure. They believe that research libraries should amass collections of deep relevance in a coordinated fashion, encompassing information resources in both digital and traditional formats. Librarians agree, adding a requirement of cost-effective coordination of effort among research institutions.

2. There is a good and expanding system for providing intellectual access to information, both in libraries and on the Web. Institutions must invest fiscal and other resources to make unique or special collections more broadly accessible. Faculty are urged to make increased use of primary source materials to develop critical thinking in students.

3. Copyright and management of intellectual property are key issues. Scholars and librarians on the task force believe that institutions and learned societies favor the rights of users over those of the creators of copyrightable material. Library organizations and learned societies should explore the possibilities of exploiting and managing intellectual property to yield greater benefits to the scholarly communities.

4. Institutions of higher education and research should place more emphasis on training and support for faculty use of information and instructional technologies. Research libraries and learned societies should endeavor to specify improvements in the system of scholarly communication and to provide models designed to make more scholarly materials accessible to scholars everywhere.

5. The task forces believe that there is too little sharing of information to enable the scholarly community to participate in the philosophical and policy issues arising from the use of information technology in research and teaching, as well as in libraries. They urge CLIR and ACLS to improve communications with individual institutions and with each learned society to close the gap of understanding and to encourage broader participation in policy setting.

SYNTHESIS OF PROCEEDINGS

In late fall 1997, Stanley Katz, then president of the ACLS, and Deanna B. Marcum, president of CLIR, surveyed the state of affairs in scholarship, college and university teaching, and research librarianship. They concluded that sufficient experience had been amassed in the use of digital methods and sources by scholars, students, and librarians to try to derive some forecasts for future developments and directions in research librarianship. The conclusion that forecasts could be made was also based on observation of the myriad of projects and programs, initiatives, and inventions made possible by the broad and rapid distribution of digital tools and techniques over the World Wide Web. What the two presidents observed eighteen months ago was that neither a synthesis nor an overview of digital developments has yet emerged in the fields of higher education and research. They found few credible attempts to assess on a national scale what directions might be taken to ensure that librarians and scholars continue to work in the kind of synchrony which had evolved so effectively until the advent of the digital era.

In November 1997, the Gladys Krieble Delmas Foundation generously agreed to support a joint ACLS-CLIR effort "to consider changes in the process of scholarship and instruction that will result from the use of digital technology and to assure that libraries continue to serve the research needs of scholars." Presidents Katz and Marcum asked 36 scholars and librarians to convene in five task forces, each devoted to one of five types of scholarly resources: visual materials; manuscript materials; audio materials; monographs and journals; area studies materials. Rather than seeking to select truly representative members for each task force, the presidents appointed knowledgeable and active practitioners, involved in the tumultuous changes wrought in these early years of the digital era and associated with one or more of the five types of scholarly resources being examined. The task forces met separately, commented via e-mail on matters arising in their meetings, and then gathered as a plenary task force for a day in June 1998 to consider threats to, and opportunities in, amassing, providing access to, and preserving collections for current and future generations of scholars, students, and citizens. The plenary session was structured as an exchange of views on four strategically interesting topics that had arisen in the preliminary discussions.

Strategic Issues

The four topics for organizing the discussion were: the use of finding aids and bibliographical resources; the growth and management of collections; infrastructure components; and copyright and intellectual property issues. Discussions in the materials task forces and in the plenary session revealed a fifth issue: the need for investment in communication and understanding, both within institutions, and among institutions throughout the realms of higher education and research. Remembering that the members of the task forces ranged in their spheres of influence from the deans, provosts, and chiefs of major research libraries who are responsible for conducting orchestras of scholarly and support efforts, to scholars, teachers, and subject specialist librarians who are the practitioners of a particular specialty, it is perhaps not surprising that views varied dramatically on what was occurring and what *should* be occurring. Ample time had to be invested in each meeting to allow for a full exchange of views, even among this carefully selected group of knowledgeable and active practitioners, in order to properly address the four main strategic issues.

Strategic recommendations emerging from the discussions reflected the theme of greater sharing and coordination. As the digital era unfolds, the lack of a critical mass of shared information may hinder community-wide involvement in philosophical and policy matters of real substance. Similarly, research and teaching institutions might be well advised to ensure that means are found to create within their communities, a broader awareness of advances in core functions made possible by digital techniques, so that progress in one discipline might suggest new possibilities for progress in another. Another suggestion to individual institutions and to individual scholars within them is to seek a more effective balance in the distribution of resources and responsibilities across the great divide of centralized and decentralized functions. Important advances can be made when creative solutions are linked with cost-effectiveness. Furthermore, in the present dynamic environment, institutional success may well depend upon skillful balancing of dependability in operational support systems and experimentation to improve performance.

Cultural Custodianship

One theme recurred in all the discussions: despite dire predictions of the demise of libraries and of sweeping changes in the roles of librarians, the fundamental roles and responsibilities of librarians and libraries in higher education and research remained and would persist. Moreover, for scholars who are clients of libraries and librarians, these roles and responsibilities have been expanded by new communications media and by new techniques based on information technology. One task force member identified the fundamental roles and responsibilities of research librarians as: selection and acquisition of

relevant material; provision of intellectual access to such material; interpretation of information resources; distribution of information resources; and preservation of information and of information-bearing artifacts.

The trend towards collections which resemble one another to the detriment of the amassing of collections of unique material, manuscripts, archives, and rare books, was recognized as a threat to the continued success and growth of scholarship and teaching in North America. The rapidly escalating cost of purchasing journals in science, technology, and medicine is driving spending away from investments in collections in the humanities and social sciences in general and away from collections of unique materials in particular. A classic response to this problem has been cooperative or collaborative collection development across many research libraries, some ongoing and some which have recently been created. It was recognized that considerable areas of overlap among holdings are required for library collections to be of service for basic research and basic teaching. However, there was worry that this overlap was becoming so broad as to threaten the continued health of research programs.

Regardless of specific concerns, it was the shared opinion of all task force members that an effective national discussion leading to agreement on institutional assignments for in-depth collection building is needed. Furthermore, it is expected that a national collaborative collections development program would be cost effective; that is, it would produce measurable value which is many factors greater than its measurable costs. A national discussion on this need would include scholars and other readers and would cover special collections and archives in many different settings, including those in the member organizations of the Independent Research Library Association.

Parenthetically, it was noted that cooperation and collaboration within individual institutions was necessary as new programs of teaching and research proliferate. Holistic budgeting that includes resources for library collections and services to new programs would help deans and provosts see all the costs and tradeoffs before embarking on initiatives which might otherwise appear to be attractive. Holistic or full program budgeting might also help prevent the division of all-too-finite library collection budgets into slices so thin as to be useless.

Access to Collections

The North American system of bibliographic utilities is regarded as a strong base on which to continue to build for even better access. This system is based on shared development of, and consistent adherence to, standards of content and format of bibliographic records, and on free access to the vast majority of institutional catalogs and other finding aids. The ACLS-CLIR task forces agreed it is a priority to develop finding aids for materials in all formats and in all media. Re-

newed diligence is also needed to ensure consistency in the content and format of finding aids, even as both the range of media and the volume of data multiply, through rapid developments in the Web environment.

Given the possibility of global access to information about collections, about items, and about source materials for instruction and study, the task force members asserted that there should be new emphasis on, and encouragement for the actual use of, original materials in the arenas of critical thinking—the classrooms and seminars, the offices and labs of our research communities.

New targets for further work were identified, including national acceptance of a standard for encoded archival description, the development of mechanisms for creating and using such descriptions in a networked environment, and the development of federated mechanisms to allow discovery and retrieval of such descriptions from the global network.

Copyright and Intellectual Property

Fundamental to the respect of copyrights is knowledge of the rights of creators of content as well as those of readers and users. From the ACLS-CLIR discussions, it was apparent that while many research institutions have duly notified their scholars and students of institutional policies regarding the use of copyrighted material, such notification was not sufficient to ensure proper treatment of copyrighted materials. More education about the rights and prerogatives of scholars and others who create copyrightable material should be provided, perhaps by scholarly societies, perhaps by universities and other research institutions. Better dissemination of information about the rights of readers under the terms of the copyright law, as opposed to the interpretations of the law by various self-interested parties, is also necessary. Some task force members argued forcibly that creators of intellectual property might be better off managing their own copyrights rather than ceding them to publishers, some of whom have rapidly raised the subscription costs of journals in the sciences, technology, and medicine. It was suggested by a few that faculty sometimes circumvent copyrights and abuse fair use provisions out of pure frustration, because of the difficulty of securing reproduction rights.

The pressure on libraries to find new sources of income creates both a threat and an opportunity. The task force members were concerned, on the one hand, by the threat of narrowing access to content because of annual decreases in purchasing power and slower collections growth, and intrigued, on the other hand, by the possibilities of earning money by selling access to information or self-publishing of institutionally supported intellectual property. Since income can be generated by exploitation of publishable materials owned by research and teaching organizations, one solution to the problem of affording continuing collection development might lie in universities

exploiting their own material. This raises the question of whether readers who otherwise might have had free access would face unfair barriers to access; at the very least, a public relations campaign to educate readers would be necessary. All agreed that sharing experiences in licensing materials and in self-publishing would be useful. It was also recognized that the issues which arise from selling (and reselling) information are different from those arising from the exploitation by publication of more or less unique materials owned by institutions.

Components of Infrastructure

The discussion revealed important differences in the installed base of technical and support infrastructure among the participants' home institutions. The question receiving the most emphasis was that of training and support for scholars so that they might more fully exploit the growing capacities of digital systems to present more materials, and of digital tools to analyze them more extensively. Ironically, as rapid advancement occurs in networked information and information technologies, distinctions among institutions widen. Small colleges and private research libraries adopt new technologies more slowly and their communities tend to lag in their awareness of change in this domain, compared to their colleagues at larger universities. Because these lags appear to be increasing, new mechanisms are required to disseminate successful approaches. Some members of the task forces expressed the view that such diversity should be appreciated, even as we take steps to ensure broader access to improvements, rather than decrying these inevitable dissimilarities.

Members of the task forces felt that parallel initiatives were necessary: one to develop a common infrastructure for easier discovery and retrieval of materials for scholarship, and another to define and operate a new system of scholarly communication based on retention of responsibility for scholarly communication by universities and scholarly societies. From the distribution of theses and dissertations on the Web to the determination of which digitally born materials need to be preserved (and by which methods), encompassing all the vast middle ground of publishing, reassertion of the role of universities and learned societies as publishers was felt to be a very good thing. A thorough takeover of the system of scholarly communication by learned societies and the universities would result in improvements in both its functioning and funding. These institutions and societies should embrace the opportunities presented by network technologies. Some good partial models of such a new system are already becoming available through publishing projects with university and learned society support.

There was concern over, if not consensus on, the need for new investments in digital resources in libraries and in tools to present and manipulate those resources from the workstations of individual scholars and students. Attention to both the human and technologi-

cal components of the scholarly information infrastructure is recommended, with special regard to coping with predictable increases in the rate of change and unpredictable changes in the technologies themselves. We need to evaluate the ways in which people interact with and learn from technology and to assess learning in which there is a significant component of high technology.

SUMMARIES OF TASK FORCE MEETINGS

Deanna B. Marcum, President of CLIR, opened the five task force discussions, and James Morris, CLIR vice president, led the discussions. Each meeting began with a restatement of the rationale for the task forces: to ensure that libraries and archives continue to meet the research needs of scholars in the new digital environment. CLIR and the ACLS are convening groups of scholars, librarians, and administrators to discuss how scholarly resources will be used in the future and what impediments may arise to impair their use.

This report summarizes the group's concerns and makes recommendations about actions to be taken by librarians, archivists, and others to ensure continued access to research materials in a variety of media for use by teachers, students, and researchers. The process of preparing the report began with summaries of the individual task force discussions which were distributed electronically on a closed listserv. Task force members commented on and expanded this draft. On June 30, 1998, CLIR convened all five groups for the plenary session, and this report reflects this gathering as well as the five task force meetings. The following informal summaries of the task force meetings give a sense of the range of topics and the disparate views. The recurring themes have been extracted and worked into recommendations for further action.

Area Studies Task Force

The role of the area studies task force was to think prospectively about how the nature of research in area studies will change, and about how that change will affect what libraries should collect and in what formats. The goal is to anticipate the problems that our successors will face and to craft solutions, such as efficient and coordinated acquisitions policies. Members of the group were invited to ponder whether technology affects their areas of scholarship, and if so, how. If technology allows greater access to scarce resources, how do we decide who, specifically, takes responsibility for the preservation of networked resources? And what are the models for governance of those resources?

Concerns

The group first addressed the issue of whether or not the introduction of digital technologies into area studies scholarship had a beneficial or a deleterious effect. One strongly held view was that the immediate effects were very damaging, since area studies traditionally exists at the margin of resources allocation within libraries. Because funds are being invested in digital projects—few of which involve materials in the vernacular languages of the world—areas studies are being neglected and marginalized. One task force member observed

that much of the current demand for digital projects is vendor-driven, not mission-driven, and vendors see no profit in the low financial returns associated with area studies. A case in point is JSTOR, an electronic journal publishing project that was initially funded by The Andrew W. Mellon Foundation, which does not include areas studies journals due to their low subscription numbers. In terms of digital reformatting projects, works in non-Roman alphabets have suffered because of the insufficient quality of scanning resolution for these alphabets. Furthermore, the cascading confusion of standards in the networked environment, hard enough to cope with for English-language sources, creates utter chaos in non-Roman alphabet languages.

In the classroom, this marginalization of area studies is compounded by students' perception that if a resource does not exist in electronic form, it either is not important or does not exist at all. Both non-Western and underdeveloped nations are being "dumped" or are "falling off the table." The apparent globalization of the markets does not help with the creation and dissemination of regional resources. In fact, it actually hurts, to the extent that it rewards activities and encourages knowledge creation solely for their commercial value. This results in serious gaps in the documentation of local and regional phenomena, not to mention alternative or dissident approaches, gaps that cannot be filled and will persist as holes in the fabric of recorded information. Perspectives that have been created by, and that are sympathetic to, the expansion of the global economy are already well documented in the Western literature of libraries. But where are the voices, for example, of those opposed to the hydroelectric dams under construction in China?

There was some disagreement with the original contention that investment in digital projects adversely affects funding for area-studies acquisitions. On the one hand, a subscription to JSTOR could take $40,000 out of the serials budget, including that for foreign serials; since this cost increase was generally not compensated, other subscriptions had to be cut. On the other hand, members of the task force maintained that digital technology is still a very small proportion of any library budget (3 percent at Berkeley, for example). Some libraries have seen a reduction in the staff of selectors. Others have had the experience of finding useful foreign Internet sites which turn out to be ephemeral, and once the site has disappeared, there is literally no record of the information that was once available. Is anyone archiving these electronic resources?

The practical issues of coordinating collection development, specifically of digital reformatting, brought up old frustrations with the cooperative collecting of print materials, though the consensus was that the system, however ad hoc in its execution, nevertheless works rather well. Ultimately, we shall probably default to letting those libraries with a history of committed collecting continue to do so, building strength on strength. These same libraries would then also become responsible for preservation and resource-sharing (document delivery and interlibrary loan).

Recommendations

A.1. Distance learning

Several members mentioned areas of success abroad that need further scrutiny to see whether they offer lessons for us. Examples worthy of study include the distance-learning models of the UK, Australia, and New Zealand, and the distributed collecting done by the Germans.

Widening access to area studies experts and resources through distance learning was viewed by some as realistic and salubrious, and even as an efficient way to gain new audiences for obscure subjects such as medieval Catalonian literature or the thought of St. Augustine. Others regarded it as one more threat to the profession because, when teachers are considered a resource that can be networked, small colleges may believe they have a legitimate excuse to dismiss faculty members and library staff, who are already under-supported. There was general consensus that, while most teachers now had or felt obliged to have Web sites, very few of them know how to develop good sites or have the time to maintain and update them.

A.2. Intranet and Internet presence

Universities should assist area studies teachers and librarians in developing an Internet presence that is content-driven and easily kept current.

Internet-based materials may ease the seemingly intractable problem Western libraries have in acquiring or otherwise gaining access to foreign materials. Some members of the task force imagined the possibility of forming partnerships with libraries and archives abroad that would selectively digitize materials and make them available electronically. Others cautioned that past experience with analogous microfilming projects had not been uniformly positive. The idea of having partner libraries and archives abroad do the selecting and microfilming of materials was well regarded in the abstract, but those at the table with experience of foreign cooperative filming programs agreed that a large output of film was not usually the result. More often, the programs justified the considerable time, expense, and frustration they incurred because they introduced or built up a basic preservation infrastructure in countries that lacked them. The notion of building significant bodies of resources filmed abroad is a chimera. Increasing the acquisition of print materials from these nations usually results in a much greater burden on the preservation and collections management staff, because the paper is notoriously acidic, the bindings weak, and the print quality often quite substandard.

A.3. Funding levels

Area studies can be reestablished by shoring up a few major programs across the country. Private funding for digitization should be sought, if this can be done without pandering to commercial interests.

The discussion of resources inevitably led to speculation about how to find funding at levels appropriate to support area studies staff and collections. Money that had flowed into most universities during the Cold War has dried up and well-trained and highly qualified specialists are underemployed or have been forced to leave their fields altogether. The trend is not likely to be reversed dramatically, but suggestions were made about shoring up area studies in general. For example, students in certain social science disciplines, such as economics, should be encouraged to add an area studies focus to their training.

A.4. Faculty involvement

ACLS should work with scholarly societies to help members understand the intellectual and fiscal choices that must be made by libraries regarding their collections.

The discussion of the role that faculty members might play in responding to some of the group's concerns began with a recommendation that they participate in decisions about what to consign to secondary storage. It was noted that, while many libraries have been successful in getting direction from faculty members about high-volume material, decisions about the selection of mid-level and lower-level use materials were usually forced back on to the library staff. Involving faculty in the weeding process—a process absolutely essential to the maintenance of a well-preserved and easily accessible resource base—was even harder than involving them in selection for offsite storage, in the group's experience.

A.5. Resource guide

A resource guide to area studies should be mounted on a Web site in order to facilitate resource sharing.

To guide libraries in their decisions about area studies collections, one of the strong institutions in area studies should take responsibility for an online resource guide.

ACLS-CLIR Possible Program Initiatives

1. Given the presence of a global network, promote global participation in making scholarly resources available; identify and stimulate the growth of programs involving non-North American collaboration for the development and distribution of digital information resources.
2. Identify the state of network infrastructures in a few key countries (including the major industrialized countries and a sampling of developing countries); update continuously; publish the results of the survey assessment, with hyperlinks to appropriate Web pages.

Audio Materials Task Force

The general discussion of the audio materials task force began with comments by the individual task force members about their personal use of audio materials for research and teaching and their administrative responsibilities for audio collections.

The Underuse of Audio Materials

The consensus of the task force was that the store of audio materials available in repositories around the country is, at once, indescribably rich and, for various reasons, underutilized by both scholars and the general public. (The discussants made a distinction between scholars and users based largely on the complexity of the tools which scholars require to do their work.) The materials are underutilized, at least in part, because the bibliographic resources are woefully deficient and therefore it is not widely known that these materials exist. Before scholars can mine the riches, they must have at least a rudimentary awareness of what is there to be explored.

How do you build a critical mass of audio materials and make them available to scholars? The use itself will stimulate evaluation and promote still greater use. The task force agreed on the fundamental need for bibliographic control of these materials and for cataloging (at levels of completeness to be determined) to let people know what is available and to begin to provide subject access to collections. They stressed the importance of finding aids, even from amateur sources, and the need for new sets of tools in the digital environment to manipulate audio files—for example, to integrate sound with images of a musical score and liner notes and to transmit the composite across a campus for instructional purposes. They also agreed on the need to train scholars to use audio documentary sources and said that older scholars in particular are unaware of what the new digital environment can offer for their research.

Some members of the audio materials task force cautioned that, for certain kinds of research, the digital surrogate will not be adequate. In speculating about whether technology might ever provide an adequate substitute for the artifact—by allowing topographical reading of a record, for example, using digital images of the record—they asked whether the market for such specialized kinds of technology would ever be large enough to warrant their development and subsequent support. The cost factors were acknowledged to be inescapable and sobering. One member observed that the nature of the technological mechanisms needed to search across remote repositories makes the cost of providing access "extraordinary." It was suggested that perhaps just a few institutions should take responsibility for keeping audio materials and for making them accessible; indeed, the economics of access may so require. But some members of the task force maintained that there is also value in a more scattered distribution of the materials.

Copyright

The fundamental issue of what constitutes a text in the digital environment has yet to be resolved, even as digital libraries complicate the problem by making possible the creation of new documents from existing documents. How then does the reach of copyright extend to the creation, use, reuse, and distribution of these compound documents?

One member of the task force remarked that the process of rights management has at least four aspects: control of access; use or nonuse of encryption; authentication; and a secure method of payment when required.

The panel agreed that the copyright issues are thorny and troubling, but they avoided discussing specific practices or answering the hard questions—for example, what changes to copyright law are required for scholars to have access to audio materials over library networks, or what would the widespread introduction of licensing arrangements, including blanket licenses, mean for the use of audio materials. Some task force members thought it would be instructive for some institutions to tackle the copyright issues by seizing the initiative on access and prompting legal rulings. One participant reported that copyrighted materials are distributed electronically without permission at his university, but *only* for instructional purposes within the bounds of the campus. The legality of this semiprudent procedure has not been tested.

Recommendations

B.1. Finding aids

B.1 (a) *The task force was in general agreement on the fundamental need for bibliographic control of audio collections and for finding aids—of whatever degree of completeness—to acquaint scholars and the larger public with the existence of these materials and to promote their use.*

The principal problem with spoken-word materials is the cost of proper cataloging: with tapes, there is no getting around the need to listen in real time to know precisely what is there. Given the great volume of materials to be processed, the costs of cataloging, and the surely limited amounts of money to get it done, what, if any, degree of compromise about the completeness of records is possible in structuring databases and finding commonalities? Library catalogers are traditionally disposed to prefer completeness, but is there not real benefit in the provision of at least *some* information, as compared to *no* information, about audio materials? The question, of course, is how *much* information is needed for scholars to know whether they will find the materials useful.

B.1 (b) *The task force endorsed the notion of compiling inventories of audio materials, which would provide something between a full catalog record and*

a mere list. Once the inventories have been created, it will be easier to decide what may warrant full cataloging.

While some task force members urged scholars to set priorities for cataloging audio materials, librarians cautioned that such directives may be unreliable. Today's scholarly interests may not be viewed so favorably in the future. The responsibility, they thought, would fall to curators.

B.1 (c) *Information technologies should be used (1) to help create the finding aids, perhaps by imposing standards on existing data to bring them up to code and build a thesaurus, or by entering data into an existing thesaurus and (2) to disseminate the bibliographic information.*

B.2. Costs

The group agreed that a framework for coordinating the digitizing effort and serving as the underpinning for cooperative activity is essential. They further agreed that the database is the essential component of a framework—and, in the encouraging words of one participant, "We already have it."

One member of the panel made the following critically important observation: "We are moving from 'toy' digital libraries to the next stage of digital libraries, when they will grow substantially, and we shall do something very wasteful if we all digitize the same things." Within a widely recognized framework, new models of consortial sharing may evolve, and the inadequate delivery mechanisms that have been the undoing of resource-sharing efforts in the past may be rendered efficient—and therefore acceptable—in the digital environment. Because the financial costs are so high, institutions will also need to reallocate resources in order to create large virtual collections (and not just of audio materials) and make them accessible.

ACLS-CLIR Possible Program Initiatives

1. Survey the state of availability of audio materials for scholarship and teaching on the network.
2. Survey the state of information technology available to principal audio archives, including state and federal collections.
3. Promote participation of audio industry for (1) and (2) above by communicating to the industry the importance of non-commercial uses of audio material on the network to the intellectual community.

Manuscript Materials Task Force

The purposes of the manuscript materials task force are to learn more about what scholars and teachers who rely on manuscript materials will need from libraries and archives in the future, and to help librarians and archivists address those needs now, in order to ensure future access to manuscript resources. These issues are made more pressing by the ever-increasing volume of information being generated and disseminated electronically. The ACLS-CLIR interest in the long-term accessibility of digital records was illustrated through discussion of the film which the two organizations recently produced on the problem of preservation in the digital environment, *Into the Future*, and through a brief recapitulation of some of the problems that the proliferation of information in digital form creates.

Manuscript Formats

The types of manuscript materials that have proven the most useful for researchers over time are diaries, correspondence, and other self-reflective genres, as well as draft versions of creative works, account books, and business records. The future of some of these genres is unpredictable, however. The frequency of written correspondence has dropped off dramatically with the spread of telephony, the automobile, and mass transportation. Is written correspondence being succeeded by e-mail, which appears to be replacing a significant share of some types of telephone exchanges, and which, unlike telephone calls, can indeed leave a record of the content of the communication? If so, do we need to make a concerted effort to preserve e-mail communications, or should we rely on the correspondents to do so, as we have in the past with paper records? The preferred format for use of manuscript materials is, in theory, the original, of course, but reformatted papers and printed editions are not only quite acceptable but at times preferred for ease of use. The group acknowledged that microfilming is an indispensable method for preserving fragile materials, despite the distinct limitations of microforms in access, and the librarians and archivists present expressed a general concern that there will simply never be enough resources to preserve as much material as we would like. Digitally converted items may be much easier to use, but large-scale projects for the digital conversion of original manuscripts do not appear to be the silver bullet for resolving either preservation or access issues, because of the high price and the unproven utility of such programs.

Examples of the policy and procedural questions of creating archives of e-mail and other digital communications are the controversy between the American Historical Association and the National Archives and Records Administration, and John Carlin's September 1998 statement, "We All Stand to Gain If NARA Gets Budget Breakthrough". The first may be found on the Web site of Computer Professionals for Social Responsibilities (http://www.cpsr.org/cpsr/foia/PROFS_CASE/) and the second on the Web site of George Mason University (http://chnm.gmu.edu/aha/persp/advanced.taf?function=detail &Layout1_uid1=32924).

Access to Manuscript Materials

The most significant impediment to greater access to manuscript materials is the lack of adequate finding aids, in easily located sites. The highest priority, therefore, is to continue to create machine-readable records of manuscript holdings and make those records easily accessible on the Web or on a bibliographical utility.

Other, less remediable, and perhaps intractable impediments include the "vexed and vexing" issue of copyright, particularly in such collections as personal correspondence, which may contain received mail from a variety of third parties, all of whom hold the rights to their own letters; and the ongoing efforts of heirs to control the fate of an individual's papers or to try to "protect the reputation" of the creator by censoring the record. Repositories are seldom able to loosen any of the restrictions imposed on use by donors and their heirs. Other problems may vanish over time, such as the hoarding of access to collections for which institutions may have paid a great deal of money and that they are therefore reluctant to share through reformatting. This reluctance may be quite misguided if it is based on the view that the artifactual (that is, market) value of the collection should take precedence over its research value. Only time and change in the leadership of institutions can overcome such reluctance.

Building Future Collections

One member of the task force noted that a distinct disadvantage of having his staff concentrate so much on making collections accessible—by creating finding aids, encoding documents to make them Web-accessible, and other such activities—is that the specialists have less and less time to devote to collection development, a critical and quite time-consuming activity. Others added comments about the types of documents that will be collected in the future and how difficult it will be to ensure preservation of, say, ephemera or e-mail. The upshot was an admission that, just as they have done in the past, libraries and archives in the future will have to rely on amateur collectors—such as those who scooped up all the ephemera created during the peace movement of the 1960s, a collection now housed at UCLA. In greater peril, perhaps, are government records that are being created electronically but are not being preserved systematically nor made accessible. Several court cases brought against the National Archives have highlighted both how widespread electronic records are in government, and how unprepared we are to save them. It is estimated, for example, that by the year 2000, 75 percent of all federal government transactions will be conducted electronically. Yet only in the past few months has the National Archives established a working group to deal with retention policies for such records.

The group touched only briefly on the future of paper records, as distinct from records generated electronically without traditional drafts, and on the proliferation of information recorded on video and

audio formats. They felt that a discussion of such matters would be productive only in conjunction with the other task forces.

Manuscripts on Campuses

Several members spoke of past and present efforts at their institutions to involve faculty members and students in the active use of primary source documentation. The relatively new emphasis at research universities on undergraduate education was seen as hurting the research endeavor, including its resource base. One way to respond to the shift is to work closely with faculty members in helping them to integrate the use of manuscripts into the undergraduate curriculum, something that students seem universally to enjoy. On the other hand, the requirement of some universities that every course have its own home page may further jeopardize the role of primary source research in the teaching agenda. So too may a mandated survey approach to curriculum development, when it leads to a superficial sweep over vast amounts of information without allowing a few well-chosen stops, from which to bore deeply into an event through the close reading of primary documentation.

Preservation and Archiving Issues

It was agreed that such notions as archiving the Web may not be meaningful for future researchers. In one person's words, there is simply too much information. Who will decide what is significant and should be preserved? Would it be useful to develop collection development guidelines for unpublished materials that would be analogous to those the Research Libraries Group (RLG) promulgated for published resources in its Conspectus? A high degree of confidence was expressed in the ability of collectors and researchers to sort out what is worth saving by exercising judgment about what they deem to be of long-term interest. Most of the information that a culture creates is of limited utility and dies a natural death, and this natural process of attrition will continue.

Recommendations

C.1. Finding aids

Focus on the creation of finding aids and making them Web-accessible. A researcher should be able with a single search to find all the recorded instances of the manuscript materials on his or her chosen topic.

C.2. Project-by-project justification

Do not invest too heavily in wholesale digital conversion of manuscript materials. Each project should be well defined in purpose, adhere to the highest scholarly standards, and shun the opportunistic or fashionable.

C.3. Public records

Pay more attention to the appropriate retention of public electronic records than of private ones. We can reasonably expect private records to be kept in one form or another by interested parties. Retaining public records, however, poses a much greater problem and has implications that go beyond future scholarship.

ACLS-CLIR Possible Program Initiatives

1. Publish widely the Encoded Archival Description (EAD) projects that are underway in libraries and archives, and attempt to identify projects proposed for conversion of finding aids to EAD.
2. Continue the investigation of acceptable techniques for digital preservation; publish ever more widely the ongoing saga of this investigation in the journals of each and every constituent member of ACLS and its sister organizations.

Monographs and Journals Task Force

The purpose of the monographs and journals task force is to learn more about what scholars and students who use books and journals need and expect from libraries, and to help librarians think about their future role in ensuring access to such resources. Future problems and opportunities should be viewed in light of the changing nature of information technology.

The Changing Nature of Publishing

In the fields of science, technology and medicine (STM), journals represent the frontier and are used much more than monographs, which tend to review the current state of the field. Just the opposite is true in the humanities. Moreover, journal publishing in the social sciences and humanities can take years, while, in general, STM journals race new work into print.

Academic institutions are both producers and consumers of scholarly publishing. Faculty members and students produce work which is reviewed and, if accepted, edited by academic peers, often for a commercial publisher. Libraries must then buy back the published work at escalating prices. The problem is especially serious with scientific journals, which are the most expensive. Social science and humanities journals tend to be less expensive.

Commercial publishers have aggressively expanded the publication of journals over the past several years. For example, the American Physical Society publishes 90,000 pages per year in a variety of journals, when once it published only 8,000–10,000 pages annually. So commercial publishers have both created more products and also raised their prices to maximize income.

The task force called attention to an issue that has arisen from the online availability of journals, namely, the instability of the information foundation. Because subscribers license online resources and do not own them, users have no recourse when the owner-publisher takes those resources offline. They are gone. Commercial interests, rather than scholarly or academic ones, often drive these decisions.

Electronic publication of some articles is more powerful than print publication, for example, when three-dimensional illustrations must be used, or in cases when the user wants to see variants on text (such as in translated and annotated materials). However, there are problems in evaluating electronic publications. Print journals have a limited number of pages, so editors have to be selective about what to include. E-journals are not so physically limited, and they tend to be more inclusive. Also, there is a hierarchy in print journals: in any discipline, certain journals are considered better and more selective. Without even reading an article published in the *New England Journal of Medicine*, for example, a researcher knows that it is likely to be of high quality. The value added by editors and peer reviewers and the established reputations of certain journals go a long way in helping researchers know what should receive their attention first. No such similar mechanisms now exist in electronic publishing.

Preservation and Access

The electronic storage of journals brings benefits for both preservation and access. JSTOR centralizes storage of journals and sees to their preservation through digital migration, relieving libraries of this burden. This works especially well with journals, where, frequently, the artifact is less important than the content. There is a paradox in preservation: with print resources, the less they are used, the better they can be preserved. With digital information, the opposite is true. Continued use (demand) ensures that the information will be migrated as often as necessary to remain usable in electronic form.

Preservation of esoteric pieces is most often at risk because low-use materials are often neglected. In seeking to build our knowledge base, we may be taking a step back from preserving less-used materials that nonetheless have high value to researchers now and later.

Better and more complete catalogs of available works would help librarians make decisions about what to preserve. In the nineteenth century, different fields organized different bibliographic activities so that local items could be contributed. It would be a good idea to bring critical thinkers from international groups together to look at knowledge bases and develop a plan for their mapping.

Some scholars have experienced inconvenience in using older materials relegated to remote storage; even worse, some original materials have been destroyed after being put on microfiche. Microfiche and other microforms are described by some as hard to use because the microform readers are often out of commission, the indices are difficult to access, and the endnotes inconvenient to read in conjunction with the text they gloss. Librarians and other responsible parties

were urged to think more about preserving old monographs, even if this comes at the expense of a few journal subscriptions.

The question was raised whether universities are moving away from reformatting to microforms for preservation or content. There is less money for reformatting; for example, one major library now gets half of what it used to receive for preservation. Library reformatting programs have focused on Americana in response to the priorities of the National Endowment for the Humanities (NEH), but libraries have rich collections of materials from many other national, regional, and ethnic sources that are valuable and merit conservation. Expanding reformatting efforts for material outside of the NEH priorities would be expensive, and such projects could take many decades. Most preservation work is done with grant money, and preservation funds from outside agencies are earmarked. Internal funds can be allocated to preservation purposes, but in general, internal funds have not been reallocated to extend preservation work beyond that made possible by grant money.

Selection Issues

Many publishers of Internet editions of scholarly journals insist upon purchases of an entire suite of titles rather than allowing librarians to select *and pay for* individual titles. Publishers engaging in this kind of marketing seek to maintain their cash flow from subscribing institutions. In response, libraries are joining together to buy suites of online publications rather than buying only what they need as individual libraries. Librarians accepting such arrangements justify their choice by pointing to the greater local availability of an expanded number of titles. However, site licenses such as these tend both to increase the provision of little-used information and to continue the established profitability of certain publishers, both undesirable consequences, albeit unintended.

Before World War II, scholars played a large role in selection and collection building. Their knowledge of the materials helped librarians build solid collections with the least overlap among research collections. Today, conditions are very different, and nonspecialist librarians often do not have the information on which to base judgments about buying highly specialized materials. Small universities and colleges benefit from groups of local scholarly advisors, who guide them in purchasing materials to support their disciplines.

Selecting material for offsite storage is a difficult task for librarians. Stacks are full and there are few major library building projects. Librarians have little choice but to relegate the less-used materials to less expensive offsite storage. The faculty who do use these materials feel disadvantaged because they must wait while materials are retrieved. The demise of the card catalog and the unfortunate reality of offsite storage have also removed the opportunity to peruse titles in the same or neighboring cataloging categories on the shelves. It was noted that work has been done to develop a catalog that would al-

low you to "view a shelf" on the computer terminal, to permit browsing by classification.

Visions for the Future of Technology and Scholarship

Are the technological alternatives to old systems adequate for scholars' purposes today? Many visioning sessions held on campuses today seem unable to provide a sense of the functions technology will provide for libraries and archives in 10 to 15 years. There is a feeling that we are moving along in a haphazard way; there is as yet no strategy that says, to make the information environment work for us, we need certain specified technological devices and capacities. Some libraries are interested in the development of a vision, and many librarians do have a vision of a system and how components will interrelate in the short term; they could benefit from working with visionaries in the computer industry. A number of development projects are in fact underway in the industry, some even with library partners, but they seem uncoordinated.

Members of the task force believe that there may be a disconnect between the vision that librarians have of their audience and the readers' own desires. In the minds of many readers today, the Web seems to define "real" knowledge.

The task force was also concerned about the potential neglect of the documentary base for the history of disciplines. Disciplinary histories have fallen out of fashion and many scholars are no longer interested in the history of their own fields. But unless the electronic record is kept, future scholars will no longer have the choice to return to this history. For instance, the history of science and technology has not been well studied in recent years, and the documentary base remains largely intact; however, without renewed interest, it could fail to be maintained.

Library staff have the advantage, now, of using the Internet to make experts more available. The task members discussed the practical aspects of putting scholarly materials on the Web. Currency of information presented is crucial; if the author does not make revisions, it is possible for readers to amend the work themselves by adding annotations. Thus, the Web allows a live, interactive publication. It is also possible for scholars to present their own work directly on the Web. When librarians select material to be digitized and place it on the Web, they add the function of Internet publishing to their many other roles.

The Future of the Monograph

Monographs are still a good way to communicate; libraries will continue to buy them as long as they are published. Some task force members wondered whether university presses have moved away from monographs because they are finding it increasingly difficult to sell books. Libraries may be the last market for highly specialized

monographs. On-demand printing of monographs may become increasingly important in the next few years, as demonstrated by the Columbia University pilot project that has mounted monographs online. Many task force members regret the decline in the publication of the monographic series but recognize that the current economies of monographic publishing are discouraging.

Recommendations

D.1. Improve access

Give more attention to improving accessibility of materials that have been put in storage or copied to microformats. The construction of a virtual library shelf would be helpful.

D.2. Information costs

We need to know more about the real costs of information. Technology is turning the library into a new type of scholarly resource. Yet provosts have no idea how much is being spent on library and information resources, since most of the budget for these resources is scattered under different budget categories, such as communications functions, computers and networks, and storage.

D.3. Book-like qualities

The book is still the best technology for many researchers. The qualities that make it so useful, such as page turning and indexes, can be better incorporated into advances in information technology.

D.4. Access vs. acquisition

In budgeting, do not think only about acquiring new materials. Consider also what can be done to make better use of what is already available, as through electronic resources that make print resources more available, such as indexes.

D.5. Cost sharing

Find new and efficient ways to share costs among libraries.

ACLS-CLIR Possible Program Initiatives

1. The plight of not-for-profit scholarly publishing needs to be more widely known and understood. For-profit scientific publishers have so increased prices that the cost of subscriptions has come to take up a disproportionate share of library budgets, and humanities-based monographs have become more and more underrepresented. ACLS and CLIR should monitor the evolution of scholarly communications practices and regularly distribute information about the implications to the higher education community.

2. ACLS-CLIR might commission a study of the prospects for truly innovative research using digital information resources. CLIR

and ACLS should follow these developments closely and provide follow-on investigation, analysis and publication of relevant Web sites. More convenient tools for discovery, retrieval, manipulation, and analysis are needed for the publishing genres of monographs, journals, and of related materials such as social scientific data sets and collections of digital source materials in all disciplines. Word searching and counting and analysis tools are common, but some linguists are involved in more daring and extensive research involving meaning, investigation of generative techniques, and word/term association tools which could be suitable for wider application.

Visual Materials Task Force

The purpose of the visual materials task force is to learn more about what scholars and students who use visual resources need and expect from libraries, archives, or museums, and to help librarians, archivists, and curators think about their future role in ensuring access to such resources. Most of the discussion focused on the digitization of visual materials and the creation of new digital images ("born digital"). In the first case, there was concern about whether the culture is learning to be satisfied with surrogates; in the second case, the problem is storage and preservation.

Use of Surrogates versus Originals

The task force members reflected on their experiences with digital images. One member observed that high school and university students today are using electronic resources almost exclusively. If a publication is not on the Web, for these students, it does not exist. Whereas a previous generation of students did research in the library, using print materials, students today rarely use print resources, even as a supplement. This change in practice has severely limited the body of information resources that students consult for research.

Another member pointed out that the opposite is still true at art museums. Although digital images have greatly improved access to art, art historians are hooked on the original. The wide availability of digital surrogates has not decreased interest in viewing the original, in fact, the availability of digital surrogates can stimulate demand for hard copy, as occurred when Oxford University Press mounted a series of publications online in full text. Oxford took the unusual step of making the full text available online because they considered the publications to be of marginal general interest and unlikely to generate revenue even in hard copy. But as a result of this online exposure, hard-copy sales of these publications surpassed their most optimistic expectations. An interesting parallel can be noted with the publica-

tion of color plates after World War II, which coincided with more public visits to museums.

On the other hand, surveys conducted by the College Art Association found that art faculty want access to art images, even if they are at low resolution or of poor quality. In some ways, the image can be considered a surrogate for a bibliographic record. Even if it is poor, it is an access point, a superficial level of information that the Web is useful for delivering.

Factors Influencing Availability of Digital Visual Material

The future use of electronic-based visual materials is highly specific to each field of study. However, several factors are likely to influence the creation and availability of digital images.

1. *Value added.* First, in any field, one must ask what value is gained from using digital images. One must look at what the medium does best; what can be done in digital format that cannot be done in other formats and how effective is the medium in distributing particular types of information. The answers vary among disciplines, but there are many good examples. In medicine, the use of animated anatomical drawings is a powerful teaching tool. In the humanities, the project to digitize and share images of papyrus holdings from around the world is bringing these fragile pieces together virtually and enabling researchers to exchange digital annotations.

2. *Cost-effectiveness.* Increasingly, decisions about whether to keep and where to store paper-based holdings are based on the frequency of their use. The same is true of decisions about whether to acquire or create and maintain digital information. Many materials of high scholarly value are rarely used. Thus, it is likely that a large body of important, but low-use, research material will not become available electronically. On the other hand, it is usually cost-effective to maintain electronic versions of high-use journals or required course materials.

3. *Stability of medium.* Digital archives should ascertain what is original and what is a copy. There must be standards for archival storage, and it will be necessary to document the history of the migration of content.

4. *Ownership and use rights.* Museums increasingly are unwilling to make their images available online out of concern for how they will be used or fear of losing money. Museums are debating ways to address this: should they mount low-resolution images? Include watermarks? Publishers are often reluctant to grant permission to mount something on the Web. This motivates permission-seekers to think of ways to present their request to the

rights holders so that they will be more likely to allow use. It was felt that publishers' fears about electronic distribution have affected the notion of fair use. For years, librarians have been able to allow photocopying for fair use research purposes. However, copyright has become far more restrictive with digital information, and fair use may not exist on the Web in the future.

The Role of the Librarian in the Electronic Age

What are the roles of librarians when so many others are now involved in the creation, packaging, and delivery of information, and when information can so easily be retrieved at home? Librarians are the only professionals who are trained to organize knowledge, create organizational systems, and understand standards. Computer programmers bring order out of chaos only as far as this can be done electronically. A librarian takes that electronic material and integrates it into the collection, linking print and electronic resources.

How can we reach the same level of confidence and organization when using digital resources as when using physical resources? For example, the availability and provision of digital information raises questions of how to ensure authenticity. Also, how should a librarian select for preservation?

Librarians have played a major role in building the great research collections. Currently, there is no one who does this—or could do this—in cyberspace. The traditional library model, in which people who knew books gave careful thought to creating collections that would best serve researchers, stands in sharp contrast to the free market of ideas represented by the Web today. In fifty years, if we look back on the great research collections that have been built over time, will the 1990s mark a change in their character? Will funds spent on improving access to information by digital means be taken away from acquisition and preservation of paper-based materials? To the extent that some research that includes visuals (maps or charts) is available only on the Web, as is increasingly the case with scientific disciplines, how will librarians know what to select? There may be more than one version of the material, and the open structure of the Web means that much of the material available there has not been peer reviewed.

As for the role of the librarian in digital collection development, the most important thing is to understand the institution's objectives: why does it want to create a digital resource base? Often, the goal is to raise visibility. How do these goals and objectives compare with the need to add new materials to the collection? Librarians must talk with faculty and find out what is happening at the departmental level. At Harvard, for example, it is the faculty who select materials to be digitized for curricular purposes.

Librarians can help develop digital collections by ensuring that frequently used items are pointed to and referenced. It is also important to think about all the possible audiences for digitized images and other items so that they are presented and indexed in a way that

is most useful for a broad audience and that relates to the problems to be solved. More information is needed about what materials students use. The Andrew Mellon Foundation has sponsored a project to learn how students and faculty use museums for research. MIT's Media Lab was cited as an example of a digital resource for problem-based learning.

Librarians will increasingly need to understand electronic publishing and intellectual property laws and regulations. This is especially important to those who develop exhibitions for the Web. Librarians can also benefit from a discussion of how to handle "subversive" or controversial material. Examples include the display of recipes for explosives in exhibitions and of images which some might consider offensive. Concern over controversial materials is especially an issue for visual resources curators.

Finding Aids for Image Collections

Some task force members felt that creating access to existing digital images through finding aids is the most important thing that can be done.

Participants agreed that indexing of image collections is the key problem to making digital information usable. A key issue is the training and redeployment of staff into Web specialist positions focused upon cataloging and indexing collections. While some institutions are cataloging collections of images, not many are indexing individual images. As a consequence, metadata on image collections may become increasingly available while access to individual images remains limited. Standardized cataloging systems for museum use have not evolved as they have for libraries. Librarians claim to know how museums ought to be cataloging their holdings, and are agitating to unify the recording of visual holdings in a way that would fit into existing bibliographic formats. However, most library catalogers are trained to catalog books and journals. Very few are trained as both curators and bibliographers who can deal with special materials.

Search mechanisms for retrieving individual images in collections would allow queries by subject, image, or time of origin. It was acknowledged, however, that scholars are not driving the creation of such image retrieval systems. Photo stock houses and other image providers are trying to find ways to search images, and the military has also done research in this area. The need for finding aids becomes more acute when the collection is open to large numbers of users on the Web, as in the case of the Library of Congress (LC). LC has mounted many images on the Web as part of its digital library and has thus made them widely accessible. In many other cases, when an institution digitizes its special collections, the images are usually not open to users outside the institution. Harvard's poster collection, for example, is now being scanned but will not be put on the Web.

It is hoped a system could be developed to allow virtual browsing of books or images that would be cataloged or housed in proximity to each other, as they are in libraries. It would be very useful to develop a way of looking at sets of objects on-screen, even though the actual item may be stored offsite. At the very least, one should be able to bring up the title pages, contents, and a list of illustrations at the terminal. Harvard is developing a system that will allow a reader to peruse the stacks on the monitor in this way.

Archiving of Electronic-based Materials

Preserving Web-based information presents a serious challenge. Librarians do not download materials from the Web to save them. Because the Web is so vast and constantly changing, it is impossible for librarians to select and capture the best information in hard copy. Rather, they create links to good sites, and monitor them to ensure the quality is maintained. At present, there are no electronic archival systems for the Web, although there are efforts to create them.

Maintaining digital information over time has involved the need to "migrate" it so that it is converted into new formats to keep it usable as new technological platforms emerge. In the medical schools, one participant reported, migration of information for curricular use has not been a problem. As long as information is constantly used, it will survive digitally. However, there was concern that without formal systems for archiving, a larger body of digital information may perish through benign neglect.

Storage is also a problem. Many museums with vast collections have not found a system for the storage of the vast collections of information available on the Web; assuming that such a system could be constructed, it is doubtful that any institution could afford it. Even though the costs of digital memory have gone down dramatically as the capacity of storage media have increased, the true costs include the capture, which costs between $4 and $8 per image, and the cataloging of digital images.

Film and Video

Two characteristics of still images also apply to film and video images: it is often difficult to discern whether the copy one is perusing is an original or an authorized or unauthorized copy, and it is often difficult to know under what circumstances the copy was made and thus what rights need to be considered in instructional or research use.

In the future, would film and video images be used increasingly as a primary source for research? The consensus was that, while films are used heavily for instruction, there is no indication that they are being consulted as primary sources except, perhaps, for ethnographic work. There is less of a historical imperative to keep film in its original form because surrogate forms will capture most of the important aspects. However, film historians insist upon viewing film

rather than video copies, although most repositories of current films acquire them as video versions.

Recommendations

E.1 Improve access

Many of the visual resources housed in libraries and archives have not been indexed or cataloged. Until bibliographic access is provided, these materials cannot be fully exploited by scholars.

E.2 Long-term preservation

As more visual resources are digitized and made available on the Web, ways must be found to ensure preservation of the digital files, just as the originals need to be preserved for as long as possible.

E.3 Integration

In the future, visual resources will grow in importance as primary source materials. Librarians must find ways to integrate these visual resources into the mainstream functions of the research library.

ACLS-CLIR Possible Program Initiatives

ACLS and CLIR should convene museum and library curators to discuss the most productive way to provide digital surrogates of visual resources on the Web, taking into consideration issues of authenticity, intellectual property rights, and costs.

Summary of Plenary Meeting of Task Forces June 30, 1998

On June 30, 1998, the day's discussion was organized around four principal topics on which the participants had been asked to reflect in advance: finding aids, collections management, infrastructure components, and copyright. The principal actions recommended during the consideration of each topic are summarized here, including indications as to which recommendations were assigned the highest priority.

Finding Aids and Bibliographical Resources

There was general agreement that the highest priority should be given to developing finding aids for materials in all formats, and to setting appropriate and accepted standards for the finding aids. The lack of consistency in the data and metadata used to find materials is a real problem. There were divergent views over whether energy (and funding) should be directed toward the retrospective conversion to electronic form of existing finding aids or toward the creation of new finding aids for unprocessed collections.

The problem with unprocessed and undescribed collections is indeed great, but CLIR and ACLS are not in a position to have a direct role in solving it. Instead, these organizations should find ways (1) to promote the importance for research of artifacts in all formats, and (2) to encourage faculty members to build courses and seminars around original materials and collections that need description. Together, faculty members and students would begin to describe materials for which there are as yet no finding aids.

The notion that scholars will not use materials or documents if they cannot be found on the Web was introduced, questioned, and largely dismissed. Serious scholars will always leave their chairs to find the materials they need. Students, however, may not be disposed to look beyond what appears to them on a screen.

Other actions which the task forces recommended for CLIR or other agents to undertake are to advocate the national acceptance of EAD for marking up finding aids; develop software that would make it easier to create EAD documents; promote a complete national and, ideally, international inventory of finding aids; and advocate the development of federated mechanisms to find the finding aids, which would encompass the international dimension of searching and navigating.

Collections Management

There should be a national discussion about the custody of culture, the development of collections, and the formulation of policies that assign responsibility for both *unique* resources and common resources. Escalating costs and shrinking financial resources are causing collections to become more alike, as libraries seek to satisfy the demands of the many rather than promote and preserve the special collections they may house, which are less known and less used. If libraries deaccession their infrequently used materials, we run the risk of not being certain there is at least one copy of a particular item or title remaining in the U.S. How do we make sure that the unique copy does not disappear? How do we develop a framework for debating the need to develop distinctive collections, against the current trend of homogenized collections that merely mirror one another?

We must confront the escalating cost of journals in the sciences, medicine, and technology, which has taken money away from collection development in the humanities and social sciences and reduced the funds available for buying materials from abroad.

Yet again, and even more forcefully than in the past, we must encourage cooperation among libraries. What can be learned from cooperative models that have worked in the past, such as the Farmington Plan? Cooperation will be essential as university libraries are forced to make tough decisions about what they must cut and where they should focus their collection development efforts. They should make their decisions only after good and timely communication with faculty members. Indeed, there is a need for new structures to bring together scholars, librarians, and technical experts to ensure that

scholars share the burden of selection in managing collection development at institutions. For example, faculty members and librarians should work together when new curricula are introduced at institutions. This needs to be done institution by institution, but CLIR should have a role in promoting the idea and in organizing certain model and demonstration events. Librarians need to inform faculty members in detail about the constraints under which libraries are working and engage them in the process of making decisions about collection development. Faculty members at institutions with small academic libraries, who find the materials they need on the Web or in large research libraries, may be ignoring their local libraries, and their indifference may be yet another factor contributing to the disconnection that is perceived to exist between faculty members and librarians.

We should not forget, under the enchantment of technological advances, that a splendid cataloging system is already in place. The technology has replaced neither reference libraries nor reference librarians, and browsing the shelves is still an important research technique.

We must make good use of organizations such as the Center for Research Libraries and the Research Libraries Group that have been created to extend collections and reduce costs.

We must explore how libraries can connect with cottage-industry archiving models to fulfill their archiving obligation.

Infrastructure Components

There is a need for structured R&D investment by universities in electronic resources and in the effective presentation and manipulation of information on the computer screen. But where can R&D money be found within the academic community to experiment with components of the electronic environment and to describe models for incorporating digital information into the information infrastructure of campuses? Online library catalogs have been incorporated into campus networks, but digital library projects have not.

We must develop an infrastructure that makes it easy for scholars and students to find materials. CLIR could encourage the exploration of ways for universities to license or otherwise acquire and distribute electronic resources.

We must help scholars to become comfortable with the technology and to understand its capacities and its limitations. We must pay particular attention to how people interact with and learn from the technology because better understanding in this area will help us to develop better access strategies and perhaps build an electronic resource for information about instructional technology. And as we decide how the human and technological components of the scholarly information infrastructure will fit together, we must be certain that we are providing for them over the long term.

We should begin to define an ideal new system of scholarly communication and take steps to encourage its widespread acceptance.

Such steps might include urging universities to take dissertations in electronic form, and encouraging learned societies to give prizes for articles that exist only in an electronic format.

We should embrace the opportunity the technology offers to develop new structures for the creation and dissemination of knowledge and take back from the commercial sector some of the important functions of publication. The goal should be to devise mechanisms that allow high-impact, low-cost publications.

We must create a mechanism through which learned societies can engage in discussion of the preservation issues surrounding digitization and begin to participate in the process of choosing resources to be digitized. Unlike decisions with respect to print materials, decisions about the preservation of digital materials must be taken at the time the materials are created. Scholarly societies must be made to understand the importance of their contributing to these decisions. We must convene funders to explain to them the importance of issues affecting processes of scholarly communication.

Copyright of Intellectual Property

There should be an honest and full discussion of copyright and intellectual property issues with faculty members, who, inadvertently and otherwise, do not always respect copyright restrictions. The issues are complicated, in part because faculty members are both rights holders and users. Time, costs, and the frustrations involved in securing rights are the common factors that contribute to faculty members' circumvention of copyright. There are differences in copyright issues for general collections and those for special and museum collections.

The educational effort about copyright might begin with professional societies. Faculty members should be informed about ways to better manage the intellectual property they create, and publishers who are parasitic on the academic community in their exploitation of this intellectual property should be identified and criticized openly.

There should be a resource for libraries and other academic organizations to consult when they work with commercial ventures so that they can learn from the experience of others, for example, regarding the licensing of their primary materials to the commercial sector. What have contracts included in the past? Are there common models?

Because digitizing is expensive, libraries may well contemplate recouping some of the costs of having digitized materials to which they hold copyright. The idea of charging for the information they provide is in conflict with the libraries' traditional sense of themselves as sources of free access to information. But charges may be inevitable. How much can libraries charge without being perceived as unfair? And how can users be educated to the necessity of the charges?

Recommendations

F.1. Finding aids

F.1 (a) *Advocate acceptance of the EAD standard for form and content of finding aids for collections of all genres and formats.*

F.1 (b) *Prepare finding aids for collections of all genres and formats and publish them on the Web; promote the expansion and maintenance of a single site for EAD metadata on the Web, the RLG Archival Resources Index.*

F.1 (c) *Convert existing finding aids to digital form and publish on the Web.*

F.1 (d) *Promote and advertise the development of software that facilitates the creation of EAD-compliant finding aids and discovery and retrieval software, making use of them convenient for scholars and students.*

F.2 Primary resources for teaching and research

Promote the use of source materials in teaching and research. Collections not presently organized and described might provide useful material and challenges for seminars, even at the undergraduate level.

F.3 Role of libraries, archives, and museums

Conduct a national campaign to inform the academic community and the general public of the cultural role of libraries, archives, and museums, even in the age of digital information.

F.4 STM journal pricing

Disseminate in digest form the consequences of the STM journal pricing crisis on the humanities and social sciences in the academy.

F.5 Copyright

F.5 (a) *Disseminate in digest form the consequences of the new copyright and intellectual property laws, treaties, and regulations.*

F.5 (b) *Promote conscious and careful management of authors' copyrights among communities of faculty authors. Point out the advantages and possibilities of content licensing by authors rather than giving up copyrights to publishers.*

F.6 Collaboration

Promote cost-effective collaboration among libraries and museums to ensure depth and redundancy in content of the logical national collections.

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* denotes attendance at the task force meeting; @ denotes attendance at the plenary meeting of the task forces

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APPENDIX B

Task Force Recommendations

Area Studies

A.1 Distance learning

Several members mentioned areas of success abroad that need further scrutiny to see whether they offer lessons for us. Examples worthy of study include the distance-learning models of the UK, Australia, and New Zealand, and the distributed collecting done by the Germans.

Widening access to area studies experts and resources through distance learning was viewed by some as realistic and salubrious, and even as an efficient way to gain new audiences for obscure subjects such as medieval Catalonian literature or the thought of St. Augustine. Others regarded it as one more threat to the profession because when teachers are considered a resource that can be networked, small colleges may believe they have a legitimate excuse to dismiss faculty members and library staff, who are already under-supported. There was general consensus that, while most teachers now had or felt obliged to have Web sites, very few of them know how to develop good sites or have the time to maintain and update them.

A.2 Intranet and Internet presence

Universities should assist area studies teachers and librarians in developing an Internet presence that is content-driven and easily kept current.

Internet-based materials may ease the seemingly intractable problem Western libraries have in acquiring or otherwise gaining access to foreign materials. Some members of the task force imagined the possibility of forming partnerships with libraries and archives abroad that would selectively digitize materials and make them available electronically. Others cautioned that past experience with analogous microfilming projects had not been uniformly positive. The idea of having partner libraries and archives abroad do the selecting and microfilming of materials was well regarded in the abstract, but those at the table with experience of foreign cooperative filming programs agreed that a large output of film was not usually the result. More often, the programs justified the considerable time, expense, and frustration because they introduced or built up a basic preservation infrastructure in countries that lacked them. The notion of building significant bodies of resources filmed abroad is a chimera. Increasing the acquisition of print materials from these nations usually results in a much greater burden on the preservation and collections management staff, because the paper is notoriously acidic, the bindings weak, and the print quality often quite substandard.

A.3 Funding levels

Area studies can be reestablished by shoring up a few major programs across the country. Private funding for digitization should be sought, if this can be done without pandering to commercial interests.

The discussion of resources inevitably led to speculation about how to find funding at levels appropriate to support area studies staff and collections. Money that had flowed into most universities during the Cold War has dried up and well-trained and highly qualified specialists are underemployed or have been forced to leave their fields altogether. The trend is not likely to be reversed dramatically, but suggestions were made about shoring up area studies in general. For example, students in certain social science disciplines, such as economics, should be encouraged to add an area studies focus to their training.

A.4 Faculty involvement

ACLS should work with scholarly societies to help members understand the intellectual and fiscal choices that must be made by libraries regarding their collections.

The discussion of the role that faculty members might play in responding to some of the group's concerns began with a recommendation that they participate in decisions about what to consign to secondary storage. It was noted that, while many libraries have been successful in getting direction from faculty members about high-volume material, decisions about the selection of mid-level and lower-level use materials were usually forced back on to the library staff. Involving faculty in the weeding process—a process absolutely essential to the maintenance of a well-preserved and easily accessible resource base—was even harder than involving them in selection for offsite storage, in the group's experience.

A.5 Resource guide

A resource guide to area studies should be mounted on a Web site in order to facilitate resource sharing.

To guide libraries in their decisions about area studies collections, one of the strong institutions in area studies should take responsibility for an online resource guide.

Audio Materials

B.1 Finding aids

B.1 (a)*The task force was in general agreement on the fundamental need for bibliographic control of audio collections and for finding aids—of whatever degree of completeness—to acquaint scholars and the larger public with the existence of these materials and to promote their use.*

The principal problem with spoken-word materials is the cost of proper cataloging: with tapes, there is no getting around the need to listen in real time to know precisely what is there. Given the great volume of materials to be processed, the costs of cataloging, and the surely limited amounts of money to get it done, what, if any, degree of compromise about the completeness of records is possible in structuring databases and finding commonalities? Library catalogers are traditionally disposed to prefer completeness, but is there not real benefit in the provision of at least *some* information, as compared to *no* information, about audio materials? The question, of course, is how *much* information is needed for scholars to know whether they will find the materials useful.

B.1 (b) *The task force endorsed the notion of compiling inventories of audio materials, which would provide something between a full catalog record and a mere list. Once the inventories have been created, it will be easier to decide what may warrant full cataloging.*

While some task force members urged scholars to set priorities for cataloging audio materials, librarians cautioned that such directives may be unreliable. Today's scholarly interests may not be viewed so favorably in the future. The responsibility, they thought, would fall to curators.

B.1 (c) *Information technologies should be used (1) to help create the finding aids, perhaps by imposing standards on existing data to bring them up to code and build a thesaurus, or by entering data into an existing thesaurus and (2) to disseminate the bibliographic information.*

B.2 Costs

The group agreed that a framework for coordinating the digitizing effort and serving as the underpinning for cooperative activity is essential. They further agreed that the database is the essential component of a framework—and, in the encouraging words of one participant, "We already have it."

One member of the panel made the following critically important observation: "We are moving from 'toy' digital libraries to the next stage of digital libraries, when they will grow substantially, and we

shall do something very wasteful if we all digitize the same things." Within a widely recognized framework, new models of consortial sharing may evolve, and the inadequate delivery mechanisms that have been the undoing of resource-sharing efforts in the past may be rendered efficient—and therefore acceptable—in the digital environment. Because the financial costs are so high, institutions will also need to reallocate resources in order to create large virtual collections (and not just of audio materials) and make them accessible.

Manuscript Materials

C.1 Finding aids

Focus on the creation of finding aids and making them Web-accessible. A researcher should be able with a single search to find all the recorded instances of the manuscript materials on his or her chosen topic.

C.2 Project-by-project justification

Do not invest too heavily in wholesale digital conversion of manuscript materials. Each project should be well defined in purpose, adhere to the highest scholarly standards, and shun the opportunistic or fashionable.

C.3 Public records

Pay more attention to the appropriate retention of public electronic records than of private ones. We can reasonably expect private records to be kept in one form or another by interested parties. Retaining public records, however, poses a much greater problem and has implications that go beyond future scholarship.

Monographs and Journals

D.1 Improve access

Give more attention to improving accessibility of materials that have been put in storage or copied to microformats. The construction of a virtual library shelf would be helpful.

D.2 Information costs

We need to know more about the real costs of information. Technology is turning the library into a new type of scholarly resource. Yet provosts have no idea how much is being spent on library and information resources, since most of the budget for these resources is scattered under different budget categories, such as communications functions, computers and networks, and storage.

D.3 Book-like qualities

The book is still the best technology for many researchers. The qualities that make it so useful, such as page turning and indexes, can be better incorporated into advances in information technology.

D.4 Access vs. acquisition

In budgeting, do not think only about acquiring new materials. Consider also what can be done to make better use of what is already available, as through electronic resources that make print resources more available, such as indexes.

D.5 Cost sharing

Find new and efficient ways to share costs among libraries.

Visual Materials

E.1 Improve access

Many of the visual resources housed in libraries and archives have not been indexed or cataloged. Until bibliographic access is provided, these materials cannot be fully exploited by scholars.

E.2 Long-term preservation

As more visual resources are digitized and made available on the Web, ways must be found to ensure preservation of the digital files, just as the originals need to be preserved for as long as possible.

E.3 Integration

In the future, visual resources will grow in importance as primary source materials. Librarians must find ways to integrate these visual resources into the mainstream functions of the research library.

Plenary Session

F.1 Finding Aids

F.1 (a) *Advocate acceptance of the EAD standard for form and content of finding aids for collections of all genres and formats.*

F.1 (b) *Prepare finding aids for collections of all genres and formats and publish them on the Web; promote the expansion and maintenance of a single site for EAD metadata on the Web, the RLG Archival Resources Index.*

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F.1. (d) *Promote and advertise the development of software which facilitates the creation of EAD-compliant finding aids and discovery and retrieval software, making use of them convenient for scholars and students.*

F.2 Primary resources for teaching and research

Promote the use of source materials in teaching and research. Collections not presently organized and described might provide useful material and challenges for seminars, even at the undergraduate level.

F.3 Role of libraries, archives, and museums

Conduct a national campaign to inform the academic community and the general public of the cultural role of libraries, archives, and museums, even in the age of digital information.

F.4 STM journal pricing

Disseminate in digest form the consequences of the STM journal pricing crisis on the humanities and social sciences in the academy.

F.5 Copyright

F.5 (a) *Disseminate in digest form the consequences of the new copyright and intellectual property laws, treaties, and regulations.*

F.5 (b) *Promote conscious and careful management of authors' copyrights among communities of faculty authors. Point out the advantages and possibilities of content licensing by authors rather than giving up copyrights to publishers.*

F.6 Collaboration

Promote cost-effective collaboration among libraries and museums to ensure depth and redundancy in content of the logical national collections.

APPENDIX C

ACLS-CLIR Program Initiatives

Area Studies

1. Given the presence of a global network, promote global participation in making scholarly resources available; identify and stimulate the growth of programs involving non-North American collaboration for the development and distribution of digital information resources.
2. Identify the state of network infrastructures in a few key countries (including the major industrialized countries and a sampling of developing countries); update continuously; publish the results of the survey assessment, with hyperlinks to appropriate Web pages.

Audio Materials

1. Survey the state of availability of audio materials for scholarship and teaching on the network.
2. Survey the state of information technology available to principal audio archives, including state and federal collections.
3. Promote participation of audio industry for (1) and (2) above by communicating to the industry, the importance of non-commercial uses of audio material on the network to the intellectual community.

Manuscript Materials

1. Publish widely the Encoded Archival Description (EAD) projects that are underway in libraries and archives, and attempt to identify projects proposed for conversion of finding aids to EAD.
2. Continue the investigation of acceptable techniques for digital preservation; publish ever more widely the ongoing saga of this investigation in the journals of each and every constituent member of ACLS and its sister organizations.

Monographs and Journals

1. The plight of not-for-profit scholarly publishing needs to be more widely known and understood. For-profit scientific publishers have so increased prices that the cost of subscriptions has come to take up a disproportionate share of library budgets, and humanities-based monographs have become more and more un-

derrepresented. ACLS and CLIR should monitor the evolution of scholarly communications practices and regularly distribute information about the implications to the higher education community.

2. ACLS-CLIR might commission a study of the prospects for truly innovative research using digital information resources. CLIR and ACLS should follow these developments closely and provide follow-on investigation, analysis and publication of relevant Web sites. More convenient tools for discovery, retrieval, manipulation, and analysis are needed for the publishing genres of monographs, journals, and of related materials such as social scientific data sets and collections of digital source materials in all disciplines. Word searching and counting and analysis tools are common, but some linguists are involved in more daring and extensive research involving meaning, investigation of generative techniques, and word/term association tools which could be suitable for wider application.

Visual Materials

1. ACLS and CLIR should convene museum and library curators to discuss the most productive way to provide digital surrogates of visual resources on the Web, taking into consideration issues of authenticity, intellectual property rights, and costs.

APPENDIX D

Other ACLS-CLIR Projects

1. Survey digitization projects which are bringing retrospective material for humanists and social scientists to the Web; update the survey continuously; publish the results of the survey with hyperlinks from abstracts to appropriate Web pages.

2. Survey research and teaching in the humanities and social sciences for innovative uses of information technology; update the survey continuously; publish the results of the survey with hyperlinks from abstracts to appropriate Web pages.

3. Survey fixed population of independent research libraries (Independent Research Library Association), university and national research libraries (Association of Research Libraries), and college libraries (Oberlin Group) for innovative uses of information technology in presenting metadata, and for innovative discovery and retrieval techniques and search engines; update the survey continuously; publish the results of the survey with hyperlinks from abstracts to appropriate Web pages; promote adoption of best practices and tools.

4. Commission study on divergence and convergence in library collections; perform statistically reliable survey of OCLC and RLG databases to measure replication of titles; analyze reports of special collecting in library literature for evidence of change in collecting patterns and rate of accession of special collections; promote collecting programs with unique targets.

5. Based on projects (1) – (4), identify redundant and similar efforts; publish report on redundancy and promote coordination of unique projects.

6. Promote EAD projects, particularly those of RLG.

7. Continue work with other national organizations on long-term preservation of archival copies of digital information resources; commission articles for newspaper publication on archiving the Internet in order to achieve wider recognition of the preservation and archiving issues.

8. Promote serious consideration of the e-print archive programs for more fields in STM and for the humanities and social sciences; commission a study of the impact of such programs on disciplines.

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9. Persuade NEH and other funding agencies to continue investing in finding aids and bibliographic projects; consider divergence of some of these projects from MARC and even EAD formats and guidelines for the sake of experimenting with intellectual access in new and perhaps more cost-effective modes.

10. Commission a study on training and support programs targeting faculty and teaching assistants in the use of technology in teaching and research; publish the study on the Web with links; update continuously.

11. Solicit articles and commentary from scholars on how libraries support or hinder research today.